BROADCAST ENGINEERING CONFERENCE

By JAMES M. ROBINSON

RADIO engineers from all over the country recently attended the Broadcast Engineers Conference at Ohio State University. This conference, held February 7-18, was sponsored by the Department of Electrical Engineering, and was one of the greatest educational achievements of the College of Engineering. It was far reaching in its scope, bringing together leaders in the industry and practicing engineers from all parts of the United States and Canada in a discussion of some of the most important technical problems in the broadcast field.

This was the first attempt for a gathering of its kind, and to show the widespread interest shown there were 96 members registered for the conference. These men represented 24 states, the District of Columbia, and three Canadian provinces, some coming from such distant points as Florida, Connecticut, Montana, North Dakota, Colorado, Texas, and Nova Scotia; 36 came from Ohio. There were representatives from the various branches of the communication field; 47 came from broadcast stations, 18 from universities, 11 from government service, and 20 from manufacturing and miscellaneous industries. The meetings were attended also by members of the Department of Electrical Engineering staff and advanced students especially interested in communication.

Last year Professor W. L. Everitt, director of the conference, conceived the idea and began investigating its possibilities. Questionnaires were sent to leading broadcast stations to determine their reactions. The returns showed such marked interest that plans were immediately begun.

It was decided to hold the meetings during a two week period, discussing three topics each day. A period of two hours was assigned to each topic, the first hour devoted to a formal lecture by the leader, and the second to consist of a round-table discussion participated in by all.

The next problem was to get men to act as speakers and leaders in the discussion. A selection was made of those men recognized by all broadcast engineers as outstanding authorities on the topics

which they were to discuss. By December, through the personal efforts of Professor Everitt, all of the men originally selected had consented to participate, the date was set, and the conference was publicized.

The following is a list of the speakers who conducted the discussions, the subjects discussed, and a brief biographical sketch of each speaker as taken from the program:

HAROLD H. BEVERAGE, Chief Research Engineer, R. C. A. Communications, Inc.

Subject: Ultra High Frequency Propagation

A graduate in 1915 from the University of Maine with degree B.S. in Electrical Engineering, Mr. Beverage entered the employ of the General Electric Company and was for four years laboratory assistant to Dr. Alexanderson, participating in the development of the high frequency alternator which was later used in high-powered transatlantic transmitting stations. He joined the research organization of the Radio Corporation of America in 1920, and attained his present title in 1929. Mr. Beverage is now president of the Institute of Radio Engineers. He won the Morris Liebmann Memorial Prize in 1923 for his work on long wave antennas.

GEORGE H. BROWN, R. C. A. Manufacturing Co.

Subject: Broadcast Antenna Design

Dr. Brown holds degrees B.S., M.S., and Ph.D. in Electrical Engineering from the University of Wisconsin, where, as a research fellow, he carried out experimental and theoretical studies of radio transmitting antennas. From 1933 to 1937, he was engaged in research on wave propagation, antenna systems, and related circuit phenomena for the R. C. A Manufacturing Company Research Division. He is the author of a classical series of papers published in the Proceedings of the Institute of Radio Engineers dealing with broadcast, directional and ultra high frequency antennas, earth currents, and wave propagation. Dr. Brown is the inventor of the sectionalized antenna, Turnstile antenna, antenna circuit modulation system, etc.

JOHN F. BYRNE, Engineer,
Collins Radio Company, Cedar Rapids, Iowa

Subject: Field Strength Surveys

As an assistant professor of electrical engineering at Ohio State University, Mr. Byrne made numerous field strength surveys. He was also formerly a member of the Technical Staff of Bell Telephone Laboratories. Mr. Byrne is a graduate of Ohio State University, with degrees B.S. in Engineering Physics, and M.S. in Electrical Engineering.

JOHN H. DELLINGER, Chief of Radio Section, National Bureau of Standards

Subject: Propagation of Broadcast Frequencies at Night

The holder of degrees A.B. from George Washington University and Ph.D. from Princeton in 1913, Dr. Dellinger early became associated with the Bureau of Standards as a Physicist. He was Chief Engineer with the Federal Radio Commission from 1928 to 1929. From 1926-1934, he was Chief of the Radio Section, Research Division, Aeronautics Branch, Department of Commerce. Dr. Dellinger is a past President of the Institute of Radio Engineers.

WILLIAM H. DOHERTY, Radio Development Department, Bell Telephone Laboratories

Subject: High Power Radio Frequency Amplifiers

Mr. Doherty is a graduate of Harvard University with degrees B.S. in Communication Engineering, and M.S. in Engineering. His first job after graduation was with the Long Lines Department of the American Telephone and Telegraph Co. of Boston. Later, as a research associate with the National Bureau of Standards, he was assigned to the study of radio wave phenomena. His association with the Bell Telephone Laboratories dates from 1929. Mr. Doherty's work in improving the efficiency of radio-frequency power amplifiers won him the Morris Liebmann Memorial Prize, presented May 12, 1937.

WILLIAM L. EVERITT, Professor of Electrical Engineering, The Ohio State University

Subject: Coupling Networks

Dr. Everitt is perhaps best known as the author of *Communication Engineering*. Following his graduation with the degree E.E. from Cornell University, he held instructorships at Cornell and at the University of Michigan, where he received the M.S. degree. Prior to his connection with Ohio State University, he was engineer in charge of development with the North Electric Manufacturing Company at Galion, Ohio. He received the degree Ph.D. from Ohio State in 1933.

HERBERT M. HUCKE, Chief Communications Engineer, United Airlines Transport Corporation

Subject: Snow Static Effects on Aircraft; Some Principles in Aeronautical Ground Radio Station Design

Since his graduation in 1927 from the Polytechnic College of Engineering at Oakland, California, with the degree B.S. in E.E., Mr. Hucke has been associated with the Radio Corporation of America, 1925-1931, and with the United Airlines Communications Department, 1931-1934. He has held his present position since 1934.

GEORGE M. NIXON, Development Engineer, National Broadcasting Company

Subject: Studio Acoustics

Mr. Nixon's academic work was done at Pratt Institute and at New York University, where he graduated in 1927. His first experience was gained in the operating department of the Electric Storage Battery Company which he left in 1928 to engage in general broadcast development work for the National Broadcasting Company. Mr. Nixon is a member of the Acoustical Society of America, and the American Institute of Electrical Engineers.

HAROLD L. OLESON, Weston Electrical Instrument Corporation

Subject: Indicating Instruments

Mr. Oleson received his degree in Electrical Engineering from the University of Illinois. His experience includes periods during which he was engaged in research for the American-Marconi Company, and for the Radio Corporation of America. He was for some time associated with the Fansteel Products Company as an electrical engineer, and later with the Jewell Electrical Instrument Company. Since 1931, he has been Assistant General Sales Manager with the Weston Electrical Instrument Corporation.

ARTHUR E. THIESSEN, Commercial Engineering Manager, General Radio Company

Subject: Modulation and Distortion Measurements

Following his graduation in Electrical Engineering from Johns Hopkins University in 1926, Mr. Thiessen joined the staff of the Bell Telephone Laboratories. His work was concerned at first with the properties of magnetic alloys, and later with development of apparatus for transmission and reception of signals over the then new high-speed, continuously loaded transatlantic cables. Mr. Thiessen left the Bell organization in 1928 to become associated with the General Radio Company Engineering Department where his work included the design and installation of production testing equipment for radio receiver manufacturers, and the design of equipment used in radio receiver testing. More recently his work has been along lines of measuring and calibrating equipment for broadcast transmitters.

The informal gatherings also contributed much to the success of the conference. Group luncheons were held daily at the Faculty Club and the penthouse at Fort Hayes Hotel was designated to the group for evening gatherings. On Thursday evening, February 10, a dinner and smoker was held at the Fort Hayes Hotel. Professor Roderick Peattri described the work of a geographer and how he would travel. The members were also entertained by C. C. Weideman, instructor at the University High School, who played selections on various types of musical instruments of original design and construction. On Sunday, February 13, a trip was taken to Mason, Ohio, the home of the WLW transmitter, and a tour was conducted through the station. On Thursday evening, February 17, a banquet was held at the Fort Hayes Hotel. Professor E. E. Dreese, chairman of the Department of Electrical Engineering, acted as toastmaster. Speakers on the program were: Professor Everitt, C. E. MacQuigg, dean of the College of Engineering, and Professor William J. McCaughey, of the Department of Mineralogy, whose topic was "Crystals and Their Use in Industry." At the end of the program, Edward J. Fanley entertained those present with a display of magic.

The conference in all its aspects was an outstanding success, and plans are going forward to make it an annual affair. It marks a great step forward in bringing together the leaders in the communication field for the exchange of problems, ideas, and developments, and the bonding of a closer tie between university and industry. Professor Everitt and his associates should be congratulated for a fine piece of work in conceiving, organizing, and directing this, the First Annual Broadcast Engineering Conference.

Seismograph — 1755 Style

On November 18, 1755, in the early morning, there occurred in New England an earthquake of some intensity and a week later Professor John Winthrop described it in an address at Harvard College. Perhaps his description was not as graphical nor technical as the modern seismograph recording, but it was certainly more vivid.

After thanking God that such earthquakes were rare, Professor Winthrop stated that while most earthquakes lasted only two minutes, this one lasted four minutes. The professor related how he arrived at that period of time. Awakened by the violence of the earthquake, he lay in bed until the quake had subsided somewhat for he concluded that it would be highly impractical to try to walk across the room at the height of the quake. He lay awake, he estimated, two minutes. Then, he rose, lighted a candle and looked at his watch which he had set the preceding noon and found the time to be 4:15.

He went immediately to the clock and found that it had stopped at 4:11:35. It seems that Professor Winthrop had shut up in the clock-case for security a long glass tube. This tube, being overthrown by the violence of the earthquake, lodged against the pendulum and stopped the clock. The professor contended, then, that, with all the exactness that could be desired, the difference between the time of his watch at end of the quake and the time of the stopped clock determined the duration of the earthquake.

Streamline Cars Bank on Turns

Swung from special hammock-like supports, streamline railroad coaches of radical design were given their first test run recently on a branch line near Inglewood, California. The two articulated coaches are supported by three-wheel trucks so as to form one unit. Weighing more than 20,000 pounds less than those in general use today, the new cars have an extremely low center of gravity which, with their novel wheel mounting, allows them to bank on turns much as an airplane does. Although the cars appear smaller than those on other streamline trains, they have eight feet of headroom inside from the floor to the curved ceiling.